What is claimed is:

1. A method for optimizing the fit of a shell of an in-the-ear hearing apparatus comprising at least one component or structural feature, comprising the steps of:

obtaining a digital representation of a portion of the ear canal and/or a portion of the outer ear;

creating a digital representation of a shell conforming to the digital representation of the ear canal and the outer ear, the step of creating a digital representation of a shell comprising the step of creating at least a digital representation of an outer surface of the shell; and

modifying

at least one physical dimension of at least a portion of the digital representation of the shell; and/or

the dimensions and/or position of at least one component or structural feature.

2. A method as set forth in claim 1, where the step of creating a digital representation of the shell comprises the step of reducing the number of points in the digital representation of the shell.

3. A method as set forth in claim 1, where the step of modifying at least one physical dimension of at least a portion of the digital representation of the shell comprises the step of expanding, reducing, tapering, or pivoting at least a portion of the shell.

4. A method as set forth in claim 1, where the step of modifying at least one physical dimension of at least a portion of the digital representation of the shell comprises the step of dividing the shell into a plurality of segments and expanding, reducing, tapering, or pivoting one or more of the segments.

5. A method as set forth in claim 1, where the step of modifying at least one physical dimension of at least a portion of the digital representation of the shell comprises the step of compensating for anatomical irregularities in the outer ear or the ear canal.

6. A method as set forth in claim 1, where the step of modifying at least one physical dimension of at least a portion of the digital representation

of the shell comprises the step of creating a seamless interface between the shell and a faceplate.

7. A method as set forth in claim 1, where the step of creating a digital representation of the shell comprises the step of creating a faceplate integral with the shell.

8. A method as set forth in claim 1, further comprising the step of positioning one or more components or structural features in or on the shell.

9. A method as set forth in claim 8, further comprising the steps of:

reducing the volume of the shell incrementally until at least one of the components in the shell collides with another component or the internal wall of the shell; and

enlarging the volume of the shell until the collision is alleviated.

10. A method as set forth in claim 1, further comprising the step of superpositioning the shell in the ear canal and in the outer ear as applicable.

11. A method as set forth in claim 1, further comprising the step of simulating the insertion of the shell into the outer ear and the ear canal.

12. A method as set forth in claim 1, further comprising the step of fabricating a hearing instrument by direct manufacture.

13. A method as set forth in claim 1, further comprising the steps of:

fabricating a hearing instrument from the digital representation of the shell;

fitting the instrument in the user's ear;

generating an identical virtual apparatus; and

in response to the fitting of the instrument in the user's ear, further modifying at least a portion of the shell to optimize the fit, comfort, and/or performance of the apparatus.

14. A method as set forth in claim 1, further comprising the steps of:

generating an identical virtual apparatus; and

fabricating a hearing instrument;

15. A method as set forth in claim 1, further comprising the step of applying an identifier to the shell.

16. A method for optimizing the fit of a digital representation of an in-the-ear hearing apparatus comprising a shell and at least one component or structural feature, comprising the steps of:

modifying at least one physical dimension of at least a portion of the shell; and/or

modifying the dimensions and/or position of at least one component or structural feature.

17. An apparatus for optimizing the fit of a shell of an in-the-ear hearing instrument comprising at least one component or structural feature, comprising:

a scanner for obtaining a digital representation of a portion of the ear canal and optionally a portion of the outer ear; and

a processor for creating a digital representation of the shell that conforms to the scanned digital representation of the ear canal and the outer ear as applicable, the processor comprising

means for creating at least a digital representation of the shell, and means for modifying

at least one physical dimension of at least a portion of the digital representation of the shell; and/or

the dimensions and/or position of at least one component or structural feature.

18. An apparatus as set forth in claim 17, where the processor comprises means for reducing the number of points in the digital representation of the shell.

19. An apparatus as set forth in claim 17, where the processor comprises means for expanding, reducing, tapering, or pivoting at least a portion of the shell.

20. An apparatus as set forth in claim 17, where the means modifying at least one physical dimension of at least a portion of the digital representation of the shell comprises means for dividing the shell into a

plurality of segments and expanding, reducing, tapering, or pivoting one or more of the segments.

21. An apparatus as set forth in claim 17, further comprising means for fabricating a hearing instrument by rapid prototyping or direct manufacture.